Homework 4 – Sets

C++ II

Description

For this assignment we will build a set using the tree structure we created in class.

Specifications

You will need to complete the following:

1. Write an implementation of the set class.
2. This class will be based on the tree class we wrote. You will need to add the following:
    a. Iterators using a binary search tree, both const and non-const iterators.
    b. Add to each node a link to the parent node.
    c. You will need a new insert and begin member functions. The insert function should return an iterator now.
3. In the main method, instantiate your set class and fill it with 50 random integer values, then write a loop that iterates over the set both forwards and backwards. You will also need to display the set in pre, post, and in-order – Consider adding methods to make that work.

Documentation

You will create a document (.docx, .rtf, .pdf) which contains the following:

- Your name and assignment.
- A screenshot of your code output.
- Explain how BST works.
- What could possibly cause the "contains" performance of a BST to degrade?

What to Submit

You need to submit your C++ code files along with your document. Make sure your document is in the correct format and all your files include your name and assignment. ***ZIP*** your C++ code, but **DO NOT** zip your document file.